CLAIMS

1. A medical device, comprising:

a barrel having proximal and distal ends;

a tube secured about the barrel, the tube having a collar positioned adjacent the distal end of the barrel, the collar having an edge; and

a shield mounted about said tube and axially movable between a retracted position, wherein the distal end of the barrel is exposed, and an extended position, wherein the distal end of the barrel is covered, the shield having a proximal end, a distal end, and a circumferential sidewall therebetween, the circumferential sidewall having an outside surface and an inside surface;

user-activatable locking means to secure the shield in the extended position, the user activatable locking means comprising

at least one deflectable arm having a distal end mounted with the circumferential sidewall and a proximal end deflectable towards the interior of the shield, said at least one arm having a free position wherein the arm is substantially coplanar with the circumferential sidewall of the shield, and a locking position, wherein the arm is deflected towards the interior of said shield so that the proximal end is positioned towards the interior of the shield,

at least one stop member mounted to the interior surface of the shield adjacent the proximal end of the shield to define a gap between the stop member and the proximal end of the deflectable arm, and

a ring axially slidable around the outside surface of the shield between a first position wherein the ring is spaced away from the at least one deflectable arm and a second position wherein the ring is positioned against said at least one deflectable arm to secure the arm in the locking position.

2. The medical device of claim 1, wherein the barrel includes a piercing element at its distal end, wherein the piercing element is exposed when the shield is in the retracted position, and wherein the piercing element is protectively covered when the shield is in the extended position.

3. The medical device of claim 1, wherein a flange is provided adjacent the proximal end of the barrel, the tube secured to the barrel at the flange of the barrel.

4. The medical device of claim 1, wherein said ring is secured to the distal end of the shield by a user-severable connection in the first position,

wherein an end user may sever the user-severable connection to axially slide the ring to the second position.

5. The medical device of claim 1, wherein the stop member includes a proximally-facing sloped surface and a distally facing stop surface, the gap defined between said stop surface and the proximal end of said at least one deflectable arm.

6. The medical device of claim 1, wherein said deflectable arm comprises structure for retaining the ring in the second position.

7. The medical device of claim 6, wherein the structure for retaining comprises a distal abutment and a proximal abutment spaced from said distal abutment, wherein said ring is retained in the space between said proximal and distal abutments.

8. The medical device of claim 7, wherein the space between said proximal and distal abutments is raised from the surface of said at least one deflectable arm, wherein said space is substantially co-planar with the circumferential sidewall of the shield when said deflectable arm is in the locking position.

9. The medical device of claim 7, wherein said distal abutment includes a distally-facing sloped surface, wherein said ring is urged over the distally-facing sloped surface of the distal abutment into said second position.

10. The medical device of claim 1, wherein said shield further comprises a second stop located on the interior surface of the shield adjacent the distal end, said second stop engageable with the collar when said shield is in the retracted position.

11. The medical device of claim 10, further comprising a third stop located on the interior surface of the shield proximally of the second stop, wherein the edge of the collar is retained between the second and third stops when said shield is in the retracted position.

12. The medical device of claim 1, wherein a locking tooth is provided on the edge of the collar.

13. The medical device of claim 12, wherein the proximal end of the at least one deflectable arm is oriented for locking engagement with the locking tooth of the collar.

14. A medical device, comprising:

a barrel having proximal and distal ends;

a piercing element extending from the distal end of the barrel and having a distal tip;

a flange provided adjacent the proximal end of the barrel;

a tube mounted about the barrel and secured to the flange, the tube having a collar positioned adjacent the distal end of the barrel, the collar having a side portion and a circumferential edge; and

a shield mounted about said tube and axially movable between a retracted position, wherein the distal tip of the piercing element is exposed, and an extended position, wherein the distal tip of the piercing element is covered, said shield having a proximal end, a distal end, and a circumferential sidewall therebetween, the circumferential sidewall having an outside surface and an inside surface, the shield including user activatable locking means to secure the shield in the extended position, the user activatable locking means comprising

at least one deflectable arm having a distal end mounted with the circumferential sidewall, a proximal end deflectable towards the interior of the shield, and an outside surface therebetween, the proximal end of the deflectable arm defining an edge for engaging said collar, said at least one arm having a free position wherein the outside surface of said arm is substantially coplanar with the circumferential wall of the shield, and a locking position, wherein said arm is deflected towards the interior of said shield so that said edge is positioned towards the interior of the shield, said deflectable arm including a pair of abutments on the outside surface spaced apart from one another,

at least one stop member mounted to the interior surface of the shield adjacent the proximal end of the shield to define a gap between the stop member and the proximal end of the deflectable arm, and

a ring retained to the shield by a user-severable connection, said ring axially slidable around the outside surface of the shield between a first position wherein the ring is spaced away from the at least one deflectable arm and a second position wherein the ring is positioned between the pair of abutments on said at least one deflectable arm to secure the arm in the locking position,

wherein the ring is slid proximally along the shield until the ring is positioned between the pair of abutments, and the shield thereafter urged distally so that the circumferential edge of the collar enters into the gap defined between the stop member and the proximal end of the arm so that the edge of the arm engages the collar.

15. The medical device of claim 14, wherein a locking tooth is provided on the circumferential edge of the collar.

16. The medical device of claim 15, wherein the edge of the arm is oriented for locking engagement with the locking tooth of the collar.

17. The medical device of claim 16, wherein the edge is canted.

18. The medical device of claim 14, wherein said stop member includes a proximally-facing sloped surface, wherein said shield is slidable proximally over said collar to place the shield in said retracted position.

19. The medical device of claim 14, further comprising at least one slit in said circumferential sidewall intermediate the proximal end of the shield the proximal edge of the deflectable arm.

20. The medical device of claim 14, wherein the circumferential sidewall defines a thickness between the inside surface and the outside surface, wherein the thickness of the sidewall adjacent the proximal end of the shield is less than the thickness of the sidewall intermediate the proximal and distal ends of the shield.

21. The medical device of claim 14, wherein the pair of abutments on the at least one deflectable arm includes a proximal abutment and a distal abutment, the distal abutment including a distally-facing sloped surface to facilitate passage of the ring over the distal abutment for placement between the pair of abutments.

22. The medical device of claim 14, wherein the edge of said at least one deflectable arm is shaped so that it is oriented parallel to the side portion of said collar when the deflectable arm is in said locked position.

23. The medical device of claim 14, wherein said shield further comprises a second stop located on the interior surface of the shield adjacent the distal end, said second stop engageable with the side portion of the collar when said shield is in the retracted position.

24. The medical device of claim 23, further comprising a third stop located on the interior surface of the shield proximally of the second stop, wherein the collar is retained between the second and third stops when said shield is in the retracted position.

25. The medical device of claim 14, wherein said third stop comprises a proximally-facing sloped surface to facilitate passage of ring over said third stop as the shield is positioned towards its retracted position.

26. The medical device of claim 21, wherein the space between said proximal and distal abutments is raised from the surface of said at least one deflectable arm, wherein said space is substantially co-planar with the circumferential sidewall of the shield when said deflectable arm is in the locking position.

27. The medical device of claim 26, wherein the space between said proximal and distal abutments is sloped, wherein the space is substantially co-planar with the circumferential sidewall of the shield when said deflectable arm is in the locking position.

28. The medical device of claim 14, wherein the user-severable connection comprises one or more thinned sections of material between said ring and the distal end of the shield.

29. The medical device of claim 4, wherein the user-severable connection comprises one or more thinned sections of material between said ring and the distal end of the shield.

30. A medical device, comprising:

a barrel having proximal and distal ends;

a piercing element extending from the distal end of the barrel and having a distal tip;

a tube attached about the outside surface of the barrel, the tube having a collar positioned adjacent the distal end of the barrel, the collar having an edge and a locking tooth defined at the edge; and

a shield mounted about said tube and axially movable between a retracted position, wherein the distal tip of the piercing element is exposed, and an extended position, wherein the distal tip of the piercing element is covered, the shield having a proximal end, a distal end, and a circumferential sidewall therebetween, the circumferential sidewall having an outside surface and an inside surface;

user-activatable locking means to secure the shield in the extended position, the user activatable locking means comprising

at least one deflectable arm having a distal end mounted with the circumferential sidewall and a canted proximal end deflectable towards the interior of the shield for locking engagement with the locking tooth of the collar, the at least one arm having a free position wherein the arm is substantially coplanar with the circumferential sidewall of the shield, and a locking position,

wherein the arm is deflected towards the interior of said shield so that the proximal end is positioned towards the interior of the shield,

at least one stop member mounted to the interior surface of the shield adjacent the proximal end of the shield and having a canted stop surface, the stop member placed on the shield to define a gap between the canted stop surface and the canted proximal end of the deflectable arm, and

a ring axially slidable around the outside surface of the shield between a first position wherein the ring is spaced away from the at least one deflectable arm and a second position wherein the ring is positioned against said at least one deflectable arm to secure the arm in the locking position,

wherein after the ring has been placed in the second position, the shield is urged distally so that the locking tooth enters into the gap between the canted stop surface and the canted proximal end of the arm to lock the tooth in the gap.

31. The medical device of claim 30, wherein an audible indication is produced as the locking tooth enters the gap.

32. The medical device of claim 30, wherein a tactile indication is produced as the locking tooth enters the gap.